

What is claimed is:

1. A method for treating a patient infected with hepatitis C virus (HCV) comprising raising the core temperature of the patient and then  
5 returning the core temperature of the patient to normal at least one time, wherein the core temperature is raised to a temperature range and a duration sufficient to reduce or eliminate the patient's viral load of HCV.
2. The method of claim 1, wherein the core temperature of the  
10 patient is raised and returned to normal one time.
3. The method of claim 1, wherein the core temperature of the patient is raised and returned to normal two or more times.
4. The method of claim 1, wherein the core temperature is  
15 raised by circulating the patient's blood from the patient, through an extracorporeal blood flow circuit, and back to the patient, wherein the blood returned to the patient has been heated within the blood flow circuit to an elevated temperature range.  
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5. The method of claim 4, wherein the patient's blood is circulated from the patient through a blood vessel and returned to the patient through a blood vessel.
6. The method of claim 4, wherein the patient's blood is  
25 circulated from the patient through a vein and returned to the patient through a vein.
7. The method of claim 4, wherein the patient's blood is  
30 circulated from the patient through an artery and returned to the patient through a vein.
8. The method of claim 1, wherein the core temperature is  
35 raised by inserting a heating element into the patient and wherein the heating element heats the patient's blood.
9. The method of claim 8, wherein the heating element is inserted into a blood vessel of the patient.

10. The method of claim 1, wherein the core temperature is raised to a temperature range of from 38 to 48°C.
- 5 11. The method of claim 1, wherein the core temperature is raised to a temperature range of from 38 to 44°C.
12. The method of claim 1, wherein the core temperature is raised to a temperature range of from 41.8 to 42.2°C.
- 10 13. The method of claim 10, wherein the core temperature is measured rectally.
14. The method of claim 10, 11, or 12, wherein the core temperature is raised for a period of from 2 minutes to sixteen hours.
- 15 15. The method of claim 10, 11, or 12, wherein the core temperature is raised for a period of from one-half to three hours.
16. The method of claim 10, 11, or 12, wherein the core temperature is raised for a period of from one to two hours.
- 20 17. The method of claim 10, 11, or 12, wherein the core temperature is raised for a period of from 80 to 100 minutes.
- 25 18. The method of claim 1, 4 or 8, wherein the patient's viral load of HCV is determined at least once before the core temperature has been raised said at least one time.
- 30 19. The method of claim 1, 4 or 8, wherein the patient's viral load of HCV is determined at least once after the core temperature has been raised and returned to normal said at least one time.
- 35 20. The method of claim 1, 4 or 8, wherein the patient's viral load of HCV is determined at least two different times after the core temperature has been raised and returned to normal said at least one time.

21. The method of claim 1, 4 or 8, wherein the patient's viral load of HCV is reduced by 30 percent or more one month after the core temperature has been raised and returned to normal said at least one time.

5        22. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 50 percent or more one month after the core temperature has been raised and returned to normal said at least one time.

10       23. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 75 percent or more one month after the core temperature has been raised and returned to normal said at least one time.

15       24. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 90 percent or more one month after the core temperature has been raised and returned to normal said at least one time.

20       25. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 95 percent or more one month after the core temperature has been raised and returned to normal said at least one time.

25       26. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a branched DNA signal amplification test one month after the core temperature has been raised and returned to normal said at least one time.

30       27. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a reverse transcriptase-polymerase chain reaction test one month after the core temperature has been raised and returned to normal said at least one time.

35       28. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 30 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

29. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 50 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

30. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 75 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

5 31. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 90 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

10 32. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced by 95 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

15 33. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a branched DNA signal amplification test three months after the core temperature has been raised and returned to normal said at least one time.

20 34. The method of claim 1, 4, or 8, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a reverse transcriptase-polymerase chain reaction test three months after the core temperature has been raised and returned to normal said at least one time.

25 35. The method of claim 1, further comprising treating the patient with a pharmaceutical indicated for hepatitis C.

36. The method of claim 35, wherein the patient is treated with a single pharmaceutical indicated for treating hepatitis C.

30 37. The method of claim 35, wherein the patient is treated with two or more pharmaceuticals indicated for treating hepatitis C.

35 38. The method of claim 35, wherein the pharmaceutical is administered before raising the core temperature of the patient said at least one time.

39. The method of claim 35, wherein the pharmaceutical is administered while the core temperature of the patient is raised.

40. The method of claim 35, wherein the pharmaceutical is administered after the core temperature of the patient has been raised and returned to normal said at least one time.

5           41. The method of claim 35, wherein the pharmaceutical is administered: (i) before raising the core temperature of the patient said at least one time; (ii) while the core temperature of the patient is raised; (iii) after the core temperature of the patient has been raised and returned to normal said at least one time; or (iv) combinations thereof.

10           42. The method of claim 35, wherein the pharmaceutical is administered before raising the core temperature of the patient said at least one time, while the core temperature of the patient is raised, and after the core temperature of the patient has been raised and returned to normal said  
15 at least one time.

          43. The method of claim 35, wherein the pharmaceutical is selected from interferons, protease inhibitors, cytokines, or any combination of antiviral drugs.

20           44. The method of claim 35, wherein the pharmaceutical is selected from ribavirin, lamivudine, interferon alfacon-1, interferon alfa-2a, interferon alfa-2b, interferon-alfa-n1, thymosin alpha-1, interleukin-2, interferon alpha-n3, ketoprofen, interferon beta-1a, interferon gamma-1b,  
25 interleukin-12, histamine dihydrochloride, thymalfasin, zidovudine, didanosine, zalcitabine, stavudine, abacavar, nevirapine, delaviridine, efavirenz, ritonavir, indinavir, nelfinavir, saquinavir, amprenavir, or combinations thereof.

30           45. The method of claim 35, wherein the pharmaceutical is selected from an interferon, ribavirin, or lamivudine.

          46. The method of claim 35, wherein the pharmaceutical is an alpha interferon.  
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          47. The method of claim 1, 4, or 8, wherein the patient has an acute HCV infection.

48. The method of claim 1, 4, or 8, wherein the patient has a chronic HCV infection.
49. The method of claim 1, 4, or 8, wherein the patient is  
5 co-infected with a pathogen.
50. The method of claim 49, wherein the pathogen is a virus.
51. The method of claim 49, wherein the pathogen is a spirochete  
10 or bacterium.
52. The method of claim 50, wherein the virus is a heat labile virus.
53. The method of claim 52, wherein the heat labile virus is  
15 selected from herpesviruses, hepadnaviruses, togaviruses, flaviviruses, coronaviruses, rhabdoviruses, filoviruses, paramyxoviruses, orthomyxoviruses, bunyaviruses, arenaviruses, or retroviruses.
54. The method of claim 52, wherein the heat labile virus is  
20 selected from HIV, hepatitis B virus, Epstein-Barr virus, cytomegalovirus, or varicella-zoster virus.
55. The method of claim 52, wherein the heat labile virus is HIV.  
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56. The method of claim 51, wherein the pathogen is a spirochete selected from the genus *Treponema*, *Borrelia*, or *Leptospira*.
57. The method of claim 51, wherein the pathogen is a spirochete  
30 selected from *Treponema pallidum*, *Treponema pertenue*, *Treponema carateum*, *Treponema pallidum endemicum*, *Borrelia burgdorferi*, *Borrelia hermsii*, or *Leptospira interrogans*.
58. A method for treating a patient infected with hepatitis C virus  
35 (HCV) comprising raising the core temperature of the patient and then returning the core temperature of the patient to normal at least one time, wherein the core temperature is raised to a temperature range and a

duration sufficient to reduce or eliminate the patient's viral load of HCV,  
and wherein the patient is co-infected with HIV.

5           59.    The method of claim 58, wherein the core temperature of the  
patient is raised and returned to normal one time.

60.    The method of claim 58, wherein the core temperature of the  
patient is raised and returned to normal two or more times.

10           61.    The method of claim 58, wherein the core temperature is  
raised by circulating the patient's blood from the patient, through an  
extracorporeal blood flow circuit, and back to the patient, wherein the  
blood returned to the patient has been heated within the blood flow circuit  
to an elevated temperature range.

15           62.    The method of claim 61, wherein the patient's blood is  
circulated from the patient through a blood vessel and returned to the  
patient through a blood vessel.

20           63.    The method of claim 61, wherein the patient's blood is  
circulated from the patient through a vein and returned to the patient  
through a vein.

25           64.    The method of claim 61, wherein the patient's blood is  
circulated from the patient through a artery and returned to the patient  
through a vein.

30           65.    The method of claim 58, wherein the core temperature is  
raised by inserting a heating element into the patient and wherein the  
heating element heats the patient's blood.

66.    The method of claim 65, wherein the heating element is  
inserted into a blood vessel of the patient.

35           67.    The method of claim 58, wherein the core temperature is  
raised to a temperature range of from 38 to 48°C.

68. The method of claim 58, wherein the core temperature is raised to a temperature range of from 38 to 44°C.

69. The method of claim 58, wherein the core temperature is raised to a temperature range of from 41.8 to 42.2°C.

70. The method of claim 67, wherein the core temperature is measured rectally.

71. The method of claim 67, 68, or 69, wherein the core temperature is raised for a period of from 2 minutes to sixteen hours.

72. The method of claim 67, 68, or 69, wherein the core temperature is raised for a period of from one-half to three hours.

73. The method of claim 67, 68, or 69, wherein the core temperature is raised for a period of from one to two hours.

74. The method of claim 67, 68, or 69, wherein the core temperature is raised for a period of from 80 to 100 minutes.

75. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is determined at least once before the core temperature has been raised said at least one time.

76. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is determined at least once after the core temperature has been raised and returned to normal said at least one time.

77. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is determined at least two different times after the core temperature has been raised and returned to normal said at least one time.

78. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 30 percent or more one month after the core temperature has been raised and returned to normal said at least one time.

79. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 50 percent or more one month after the core temperature has been raised and returned to normal said at least one time.
- 5 80. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 75 percent or more one month after the core temperature has been raised and returned to normal said at least one time.
- 10 81. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 90 percent or more one month after the core temperature has been raised and returned to normal said at least one time.
- 15 82. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 95 percent or more one month after the core temperature has been raised and returned to normal said at least one time.
- 20 83. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a branched DNA signal amplification test one month after the core temperature has been raised and returned to normal said at least one time.
- 25 84. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a reverse transcriptase-polymerase chain reaction test one month after the core temperature has been raised and returned to normal said at least one time.
- 30 85. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 30 percent or more three months after the core temperature has been raised and returned to normal said at least one time.
- 35 86. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 50 percent or more three months after the core temperature has been raised and returned to normal said at least one time.
87. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 75 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

88. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 90 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

5 89. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced by 95 percent or more three months after the core temperature has been raised and returned to normal said at least one time.

10 90. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a branched DNA signal amplification test three months after the core temperature has been raised and returned to normal said at least one time.

15 91. The method of claim 58, 61, or 65, wherein the patient's viral load of HCV is reduced to less than the sensitivity level of a reverse transcriptase-polymerase chain reaction test three months after the core temperature has been raised and returned to normal said at least one time.

20 92. A method for treating a patient infected with hepatitis C virus (HCV) comprising raising the temperature of the patient's liver and then returning the temperature of the patient's liver to normal at least one time, wherein the temperature of the patient's liver is raised to a temperature range and a duration sufficient to reduce or eliminate the patient's viral load of HCV.

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93. The method of claim 92, wherein the temperature of the liver is raised by local, regional, or intraperitoneal hyperthermia.